

WHAT IS CLAIMED IS:

*Smith B* *ABD* *1/1*

1. A pharmaceutical composition comprising fenofibrate containing microparticles produced by applying energy to fenofibrate in the presence of phospholipid and surface modifier(s), said microparticles consisting essentially of fenofibrate, a phospholipid and at least one surface modifier in which the surface modifier or surface modifiers provide volume-weighted mean particle size values of the water-insoluble compound about 50% smaller than particles produced in the presence of a phospholipid and without the presence of the surface modifier using the same energy input.
2. A pharmaceutical composition comprising fenofibrate containing microparticles produced by applying energy to fenofibrate in the presence of phospholipid and surfactant surface modifier, said microparticles consisting essentially of fenofibrate, a phospholipid and at least one non-ionic, anionic or cationic surfactant, in which the surfactant or surfactants provide volume-weighted mean particle size values of the water-insoluble compound about 50% smaller than particles produced in the presence of a phospholipid and without the presence of the surfactant using the same energy input.
3. A hard or soft gel capsule formulation comprising the composition of claim 1 or 2.
4. A suspension, spray-dried powder, lyophilized powder granules, capsules or tablets of the composition of claim 2.
5. The composition of claim 1 or claim 2 wherein the surface modifier is a polyoxyethylene sorbitan fatty acid ester, a block copolymer of ethylene oxide and propylene oxide, polyoxyethylene stearate a tetrafunctional block copolymer derived from sequential addition of ethylene oxide and propylene oxide to ethylenediamine, an alkyl aryl polyether sulfonate, polyethylene glycol, hydroxy propylmethylcellulose,

sodium dodecylsulfate, sodium deoxycholate, cetyltrimethylammonium bromide or combinations thereof.

6. The composition of claim 1 or claim 2 wherein at least two surfactants are used.

a 7. The ~~process~~ <sup>composition</sup> of claim 1 or 2 wherein the phospholipid is of egg or plant origin or semisynthetic or synthetic in partly or fully hydrogenated form or in a desalted or salt form such as phosphatidylcholine, or dimyristoyl ~~phosphatidylglycerol~~ <sup>phosphatidylglycerol</sup> sodium salt, phosphatidylethanolamine, phosphatidylserine, phosphatidic acid, lysophospholipids or combinations thereof.

8. In a process of preparing fenofibrate microparticles comprising reducing the particle size by sonication, homogenization, milling, microfluidization and precipitation, or recrystallization and precipitation of the fenofibrate using antisolvent and solvent precipitation or precipitation from supercritical fluids the improvement comprising the steps of:

(1) prior to or during particle size reduction, mixing the fenofibrate particles with (a) a natural or synthetic phospholipid and (b) at least one non-ionic, anionic or cationic surfactant, and thereafter

(2) applying energy to the mixture sufficient to produce volume-weighted mean particle size values of fenofibrate about 50% smaller than particles produced without the presence of the surfactant using the same energy input.

9. A process of stabilizing fenofibrate microparticles and preventing particles from aggregating or flocculating by coating or adhering onto the surfaces of the fenofibrate particles a mixture of a phospholipid together with at least one non-ionic, anionic or cationic surfactant, the process comprising the steps of:

(1) mixing said particles with a phospholipid and at least one non-ionic, anionic or cationic surfactant, and thereafter

(2) applying energy to the mixture sufficient to produce volume-weighted mean particle size values of said compound about 50% smaller than particles produced without the presence of the surfactant using the same energy input.

10. The process of claim 8 or 9 wherein the phospholipid is of egg or plant origin or semisynthetic or synthetic in partly or fully hydrogenated form or in a desalted or salt form such as phosphatidylcholine, or dimyristoyl phosphatidylglycerol sodium, salt, phosphatidylethanolamine, phosphatidylserine, phosphatidic acid, lysophospholipids, or combinations thereof.

11. The process of claim 8 or 9 wherein the surfactant is a polyoxyethylene sorbitan fatty acid ester polyoxyethylene stearate, a block copolymer of ethylene oxide and propylene oxide, a tetrafunctional block copolymer derived from sequential addition of ethylene oxide and propylene oxide to ethylenediamine, an alkyl aryl polyether sulfonate, polyethylene glycol, hydroxy propylmethylcellulose, sodium dodecylsulfate, sodium deoxycholate, cetyltrimethylammonium bromide or combinations thereof.

12. The process of claim 8 or 9 wherein at least two surfactants are used.

13. The process of claim 8 or 9 wherein the surfactant is present above the critical micelle concentration.

14. A pharmaceutical composition comprising microparticles prepared by the process of claim 8.

15. A pharmaceutical composition comprising microparticles produced by the process of claim 9

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